No. 8300142

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Pioneer Hi-Bred International, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

CORN

'B09'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington this 21st day of December in the year of our Lord one thousand nine hundred and eighty-four.

John R Block

Secretary of Agriculture

Attest:

Kenneth [illegible]

Commissioner
Plant Variety Protection Office
Livestock, Meat, Grain & Seed Div.
Agricultural Marketing Service

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

FORM APPROVED: OMB NO. 0581-0005

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1. NAME OF APPLICANT(S)
Pioneer Hi-Bred International, Inc.

2. TEMPORARY DESIGNATION

3. VARIETY NAME
B09

4. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)*
Plant Breeding Division
Department of Corn Breeding
P.O. Box 85, Johnston, IA 50131-0085

5. PHONE *(Include area code)*
515/270-3300

FOR OFFICIAL USE ONLY

PVPO NUMBER
8300142

6. GENUS AND SPECIES NAME
Zea mays

7. FAMILY NAME *(Botanical)*
Gramineae

FILING
DATE: 5/26/83
TIME: 2:30 ☐ A.M. ☒ P.M.

8. KIND NAME
Corn

9. DATE OF DETERMINATION
1975

FEES RECEIVED
AMOUNT FOR FILING: $ 1,000
DATE: 5/26/84
AMOUNT FOR CERTIFICATE: $ 500.00
DATE: 11/15/84

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*
Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
Iowa

12. DATE OF INCORPORATION
May 6, 1926

13. NAME AND ADDRESS OF APPLICANT REPRESENATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
Dr. Richard L. McConnell
Plant Breeding Division
Pioneer Hi-Bred International, Inc.
P.O. Box 85
Johnston, IA 50131-0085

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. ☒ Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*

b. ☒ Exhibit B, Novelty Statement

c. ☒ Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*

d. ☒ Exhibit D, Additional Description of the Variety

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act.)*
☐ Yes *(If "Yes," answer items 16 and 17 below)* ☒ No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ Yes ☐ No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ Foundation ☐ Registered ☐ Certified

18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S. OR OTHER COUNTRIES?
☐ Yes *(If "Yes," give names of countries and dates)*
☒ No

19. HAVE RIGHTS BEEN GRANTED IN THE U.S. OR OTHER COUNTRIES?
☐ Yes *(If "Yes," give names of countries and dates)*
☒ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT
Pioneer Hi-Bred International, Inc.
by:

DATE

SIGNATURE OF APPLICANT
Richard L McConnell

DATE
May 19, 1983

FORM LMGS-470 (9-81) (Edition of 1-78 is obsolete)

8300142

C O R N

'B09'

14A. Exhibit A. Origin and Breeding History

Pedigree: 555/031)X32154

Pioneer line 'B09', Zea mays L., a yellow dent corn inbred, was developed by Pioneer Hi-Bred International, Inc. from the F2 population of the single cross 555 x 031. The progenitors of 'B09'are also proprietary inbred lines of Pioneer Hi-Bred International, Inc. The pedigree method of breeding was used in the development of this inbred as per the following.

F2 seed was obtained in the field at Mankato, Minnesota, during the summer of 1971 by selfing the F1 hybrid 555 x 031. The F2 population was grown and self-pollinated at Mankato in 1972. Nineteen F3 ears were grown ear-to-row at Homestead, Florida, during the winter of 1972-73 and self-pollinated. Eight ears were saved from F3 ear-row number three. In 1973, the F4 family was grown at Mankato and eight self-pollinated ears were saved from ear-row number two. During the winter of 1973-74, the F5 family was grown ear-to-row at Homestead and seven ears were saved from ear-row number one. In addition, an F5 topcross was made to an inbred tester for evaluation of the line's general combining ability. In 1974, the testcross made to the F5 was yield tested at Mankato. The F6 generation was grown ear-to-row at Mankato in 1974 and five self-pollinated ears were saved from F6 ear-row number five. Based on hybrid yield test and inbred per se performance, the line was determined to be superior to other inbreds evaluated at Mankato in 1974. The line was named 'B09' in January 1975. Since the time that the line was named, additional hybrid combinations have been evaluated and subsequent generations of the line have been grown and hand-pollinated with observations made for uniformity. An outline of the breeding profile of the inbred is attached.

'B09' has shown uniformity and stability for all traits as described in Exhibit C (form LPGS-470-28) - "Objective Description of Variety." It has been self-pollinated and ear-rowed a sufficient number of generations with careful attention paid to uniformity of plant type to assure genetic homozygosity and phenotypic stability. 'B09' has been increased by the Parent Corn Department, Pioneer's foundation seed group, each year since 1976. The line has been increased both by hand and in isolated fields with continued observation for uniformity.

No variant traits have been observed or are expected in 'B09'.

Pioneer Hi-Bred International, Inc., Des Moines, Iowa, is the employer of the plant breeders involved in the selection and development of 'B09'. Pioneer Hi-Bred International, Inc. has the sole rights and ownership of 'B09'.

14A. Exhibit A. Origin and Breeding History of Corn Inbred Line 'B09'

Season/Year	Inbreeding Level	Nursery Location	Pedigree	Number of Ears Saved
Summer 1971	F1	Mankato, MN	555/031	Bulk
Summer 1972	F2	Mankato, MN	555/031)X	19
Winter 1972-73	F3	Homestead, FL	555/031)X3	8
Summer 1973	F4	Mankato, MN	555/031)X32	8
Winter 1973-74	F5*	Homestead, FL	555/031)X321	7
Summer 1974	F6**	Mankato, MN	555/031)X3215	5
January 1975	Line named 'B09'.			
1975-82	Line increased by hand-pollination and in isolated fields with observations made for uniformity.			

*Testcross made for yield testing in 1974.

**More hybrid combinations made involving 'B09' for testing in 1975.

4B. Exhibit B. Novelty Statement

'B09' is most similar to the public inbred line B37. 'B09' differs from B37 by maturity and anther color. 'B09' reaches 50% pollen shed and 50% silk, 60 and 105 heat units, respectively, earlier than B37. 'B09' anther color is green whereas the anther color of B37 is red.

FORM APPROVED: OMB NO. 40-R382

EXHIBIT (Com)

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION
BELTSVILLE, MARYLAND 20705

OBJECTIVE DESCRIPTION OF VARIETY

CORN *(ZEA MAYS)*

NAME OF APPLICANT(S)
Pioneer Hi-Bred International, Inc.

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
Plant Breeding Division
Department of Corn Breeding
PO Box 85
Johnston, IA 50131-0085

FOR OFFICIAL USE ONLY

PVPO NUMBER 8300142

VARIETY NAME OR TEMPORARY DESIGNATION
'B09'

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. TYPE:

[2] 1 = SWEET 2 = DENT 3 = FLINT 4 = FLOUR 5 = POP 6 = ORNAMENTAL

2. REGION WHERE BEST ADAPTED IN THE U.S.A.:

[2] 1 = NORTHWEST 2 = NORTHCENTRAL 3 = NORTHEAST 4 = SOUTHEAST
5 = SOUTHCENTRAL 6 = SOUTHWEST 7 = MOST REGIONS

3. MATURITY (In Region of Best Adaptability): *(Under "comments" (pg. 3) state how heat units were calculated)*

[8][7]	DAYS FROM EMERGENCE TO 50% OF PLANTS IN SILK	[1][4][2][9] HEAT UNITS
[ ][ ]	DAYS FROM 50% SILK TO OPTIMUM EDIBLE QUALITY	[ ][ ][ ][ ] HEAT UNITS
[ ][ ]	DAYS FROM 50% SILK TO HARVEST AT 25% KERNEL MOISTURE	[ ][ ][ ][ ] HEAT UNITS

4. PLANT:

[1][8][9] CM. HEIGHT (To tassel tip)

[0][9][1] CM. EAR HEIGHT (To base of top

[0][5] CM. LENGTH OF TOP EAR INTERNODE

Number of Tillers:

[1] 1 = NONE 2 = 1–2 3 = 2–3 4 = > 3

Number of Ears Per Stalk:

[1] 1 = SINGLE 2 = SLIGHT TWO-EAR TENDENCY
3 = STRONG TWO-EAR TENDENCY 4 = THREE-EAR TENDEN

Cytoplasm Type:

[1] 1 = NORMAL 2 = "T" 3 = "S" 4 = "C" 5 = OTHER (Specify) _____

5. LEAF (Field Corn Inbred Examples Given):

Color:

[2] 1 = LIGHT GREEN (HY) 2 = MEDIUM GREEN (WF9) 3 = DARK GREEN (B14) 4 = VERY DARK GREEN (

Angle from Stalk (Upper half):

[2] 1 = < 30° 2 = 30–60° 3 = > 60°

Sheath Pubscence:

[1] 1 = LIGHT (W22) 2 = MEDIUM (WF9)
3 = HEAVY (OH26)

Marginal Waves:

[1] 1 = NONE (HY) 2 = FEW (WF9) 3 = MANY (OH7L)

Longitudinal Creases:

[1] 1 = ABSENT (OH51) 2 = FEW (OH56A)
3 = MANY (PA11)

Width:

[0][6] CM. WIDEST POINT OF EAR NODE LEAF

Length:

[0][7][1] CM. EAR NODE LEAF

[1][6] NUMBER OF LEAVES PER MATURE PLANT

6. TASSEL:

[0][8] NUMBER OF LATERAL BRANCHES

Branch Angle from Central Spike:

[3] 1 = < 30° 2 = 30–40° 3 = > 45°

Penduncle Length:

[1][5] CM. FROM TOP LEAF TO BASAL BRANCHES

Pollen Shed:

[2] 1 = LIGHT (WF9) 2 = MEDIUM 3 = HEAVY(KY21)

Observed yellow green

[5] **Anther Color:** } 1 = YELLOW 2 = PINK 3 = RED 4 = PURPLE 5 = GREEN

[5] **Glume Color:** } 6 = OTHER (Specify) _____

Observed yellow green

Pollen Restoration for Cytoplasms (0 = Not Tested, 1 = Partial, 2 = Good)

[0] "T" [0] "S" [0] "C" [ ] OTHER (Specify Cytoplasm and degrees of restoration) _____

7. EAR (Husked Ear Data Except When Stated Otherwise):

[1][1] CM LENGTH [3][5] MM. MID-POINT DIAMETER [5][4] GM. WEIGHT

Kernel Rows:

[2] 1 = INDISTINCT 2 = DISTINCT [1][5] NUMBER

[2] 1 = STRAIGHT 2 = SLIGHTLY CURVED 3 = SPIRAL

Silk Color (Exposed at Silking Stage):

[1] 1 = GREEN 2 = PINK 3 = SALMON 4 = RED

Observed pale greenish-yellow

Husk Color:

[2] FRESH } 1 = LIGHT GREEN 2 = DARK GREEN 3 = PINK

[6] DRY } 4 = RED 5 = PURPLE 6 = BUFF

Husk Extention: (Harvest Stage)

[2] 1 = SHORT (Ears Exposed) 2 = MEDIUM (Barely Covering Ear) 3 = LONG (8–10CM Beyond Ear Tip) 4 = VERY LONG (> 10 CM)

Husk Leaf:

[3] 1 = SHORT (< 8 CM) 2 = MEDIUM (8–15 CM) 3 = LONG (> 15 CM)

Shank:

[0][5] CM LONG [5] NO. OF INTERNODES

Position at Dry Husk Stage:

[1] 1 = UPRIGHT 2 = HORIZONTAL 3 = PENDEN

Taper:

[2] 1 = SLIGHT 2 = AVERAGE 3 = EXTREME

Drying Time (Unhusked Ear):

[ ] 1 = SLOW 2 = AVERAGE 3 = FAST

8. KERNEL (Dried):

Size (From Ear Mid-Point):

[0][8] MM LONG [0][6] MM. WIDE [0][5] MM. THICK

Shape Grade (% Rounds)

[2] 1 = < 20 2 = 20–40 3 = 40–60 4 = 60–80 5 = > 80

8. KERNEL (Dried) :

[1] **Pericarp Color:** 1 = COLORLESS 2 = RED-WHITE CROWN 3 = TAN 4 = BRONZE 5 = BROWN 6 = LIGHT RED 7 = CHERRY RED 8 = VARIEGATED (Describe) _____

[1] **Aleurone Color:** 1 = HOMOZYGOUS 2 = SEGREGATING (Describe) _____

[1] 1 = WHITE 2 = PINK 3 = TAN 4 = BROWN 5 = BRONZE 6 = RE 7 = PURPLE 8 = PALE PURPLE 9 = VARIEGATED (Describe) _____

[4] **Endosperm Color:** 1 = WHITE 2 = PALE YELLOW 3 = YELLOW 4 = PINK-ORANGE 5 = WHITE CAP.
Observed brownish orange

Endosperm Type:

[3] 1 = SWEET (su1) 2 = EXTRA SWEET (sh2) 3 = NORMAL STARCH 4 = HIGH AMYLOSE STARCH 5 = WAXY STARCH 6 = HIGH PROTEIN 7 = HIGH LYSINE 8 = OTHER (Specify) _____

[1][7] GM. WEIGHT /100 SEEDS (Unsized Sample)

9. COB:

[2][1] MM. DIAMETER AT MID-POINT

Strength:

[2] 1 = WEAK 2 = STRONG

Color:

[3] 1 = WHITE 2 = PINK 3 = RED 4 = BROWN 5 = VARIEGATED 6 OTHER (Specify) _____

10. DISEASE RESISTANCE (0 = Not Tested, 1 = Susceptible, 2 = ~~Resistant~~ Tolerant):

[2]	STALK ROT (Diplodia)	[2]	STALK ROT (Fusarium)	[2]	STALK ROT (Gibberella)
[2]	NORTHERN LEAF BLIGHT	[1]	SOUTHERN LEAF BLIGHT	[2]	SMUT (Head)
[0]	SOUTHERN RUST	[2]	CORN SMUT (Common)	[2]	BACTERIAL WILT (Stewart
[0]	BACTERIAL LEAF BLIGHT	[1]	MAIZE DWARF MOSAIC	[0]	STUNT
[ ]	OTHER (Specify)				

11. INSECT RESISTANCT (0 = Not Tested, 1 = Susceptible, 2 = ~~Resistant~~ Tolerant):

[1]	CORNBORER (European)	[0]	EARWORM	[0]	SAPBEETLE	[0]	APHID
[0]	ROOTWORM (Northern)	[1]	ROOTWORM (Western)				
[0]	ROOTWORM (Southern)	[ ]	OTHER (Specify) _____				

12. VARIETIES MOST CLOSELY RESEMBLING THAT SUBMITTED FOR THE CHARACTERS GIVEN:

CHARACTER	VARIETY	CHARACTER	VARIETY
Maturity	A632	Kernel Type	B37
Plant Type	B37	Quality (Edible)	
Ear Type	B37	Usage	A632 & B47

REFERENCES:

U.S. Department Agriculture. Yearbook 1937.

Corn: Culture, Processing, Products. 1970 Avi Publishing Company, Westport, Connecticut. (Numerous (Authors)

Emerson, R.A., G.W. Beadle, and A.C. Fraser. A Summary of Linkage Studies in Maize. Cornell A.E.S., Mem. 180. 1935

The Mutants of Maize. 1968. Crop Science Society of America. Madison, Wisconsin.

Stringfield, G.H. Maize Inbred Lines of Ohio. Ohio A.E.S. Bul. 831. 1959.

Butler, D.R. 1954 — A System for the Classification of Corn Inbred Lines — PhD. Thesis, Ohio State University.

COMMENTS: Heat units are accumulated from daily temperatures as follows:
HI = Maximum air temperature in Fahrenheit, but not greater than 86.
LO = Minimum air temperature in Fahrenheit, but not less than 50.
Heat units = (HI + LO)/2-50, but not less than 0.

14D. Exhibit D. Additional Description of 'B09'

'B09' is a yellow dent inbred line of corn, Zea mays L.

As an inbred per se, 'B09' is similar to the public inbred B37 in a number of plant and seed characteristics. There are distinguishable differences, however, between the two inbreds as already stated in Exhibit B. The main differences between them is maturity as lines per se and in hybrid combinations. 'B09' is an early version of B37 and is about the same maturity as public inbred line A632. For use in hybrids, 'B09' is most similar to A632 and to Pioneer inbred line B47. For comparitive purposes, data are attached for 'B09' and B47 where both lines were crossed to the same inbred tester lines and the hybrids evaluated in the same locations.

'B09'has average or above average tolerance to Northern leaf blight (Helminthosporium turcicum), eye spot (Kabatiella zeae), common rust (Puccinia sorghi), Stewart's bacterial wilt (Erwinia stewartii), and head smut (Sphacelotheca reiliana). It is below average for tolerance to Southern leaf blight (Helminthosporium maydis), Helminthosporium leaf spot (Helminthosporium carbonum), gray leaf spot (Cercospora zeae), anthracnose (Colletotrichum graminicola), Goss's bacterial wilt (Corynebacterium nebraskense), downy mildew (Peronosclerospora sorghi), and virus diseases.

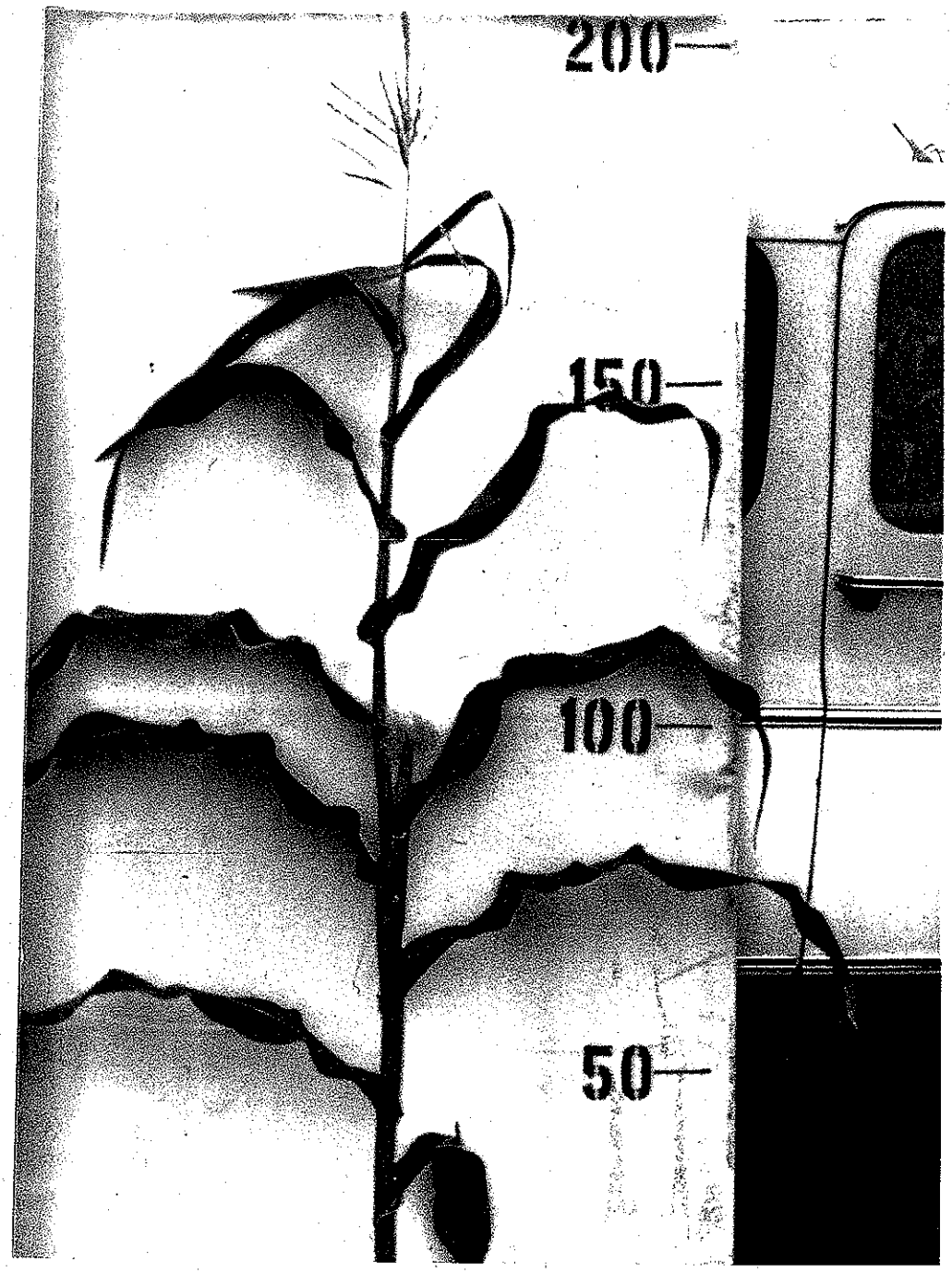
Inbred ears of 'B09' can sometimes be severely scatter grained when stress conditions are experienced. 'B09' is also susceptible to the first brood of European corn borer. In hybrids, 'B09' produces well filled F1 ears. Its hybrids are high yielding for their maturity but slightly below average for grain dry-down after physiological maturity. Its stalk quality is average to above average while root quality is below average. Grain quality and test weight of its hybrids are average; combine harvestability is above average. Late-season plant health of 'B09' hybrids is average to below average. Plant height of these hybrids is average while ear height is slightly above average.

14D Exhibit D. Comparison of 'B09' and B47 crossed to same tester lines and the hybrids evaluated at the same locations. All values are expressed as percent of the test mean except yield, which is expressed as bushels/acre adjusted to 15.5% grain moisture (1981 Data).

	Inbred	Yield	Percent Yield	Moisture	GDU Shed	Stalk Lodging	Root Lodging	Ears/Plot	Stay Green	Test Weight	Grain Quality	Cob Scores	Seedling Vigor	Plant Height	Ear Height			
No. of Reps.		66	66	66	19	66	25	26	38	63	45	41	50	43	43			
	'B09'	141	99	101	101	100	96	100	103	100	96	109	97	98	103			
	B47	142	99	98	100	101	105	100	104	100	97	108	111	99	97			
Diff.		1	0	3	1	1	9	0	1	0	1	1	14	1	6			

14D. Exhibit D. Additional Description of B09 (continued)

A. Whole plant



14D. Exhibit D. Additional Description of B09 (continued)

B. Tassel

14D. Exhibit D. Additional Description of B09 (continued)

C. Ear